USINE

Certificate of Compliance

Certificate Number: LR 23701-75

Revision: LR 23701-115

Date Issued: July 25, 1997

Issued to: **ENTRELEC INC.**
9655 rue Ignace, Suite K
Brossard, Québec
J4Y 2P3

The products listed below are eligible to bear the CSA Mark
NOTE: The "NRTL/C" indicator may appear adjacent to the CSA Mark.

Issued by: G. Foulem, E.I.T.
Montréal, QC Canada

Signature: G. Foulem

PRODUCTS

CLASS 6228 01 - WIRE CONNECTING DEVICES - Terminal Assemblies
CLASS 6228 81 - WIRE CONNECTING DEVICES - Terminal Assemblies - CERTIFIED TO U.S. STANDARDS

PART A:

NRTL/C certified terminal blocks, Cat Nos MA2.5/5.SNB, MA2.5/5.SNBT, MA2.5/5.SNBTA, MA2.5/5.SB, rated 150V, 10A, for use with Nos 22 to 12 AWG solid or stranded copper wire.

PART B:

CSA certified terminal blocks type M1.5/6.SB.ADO, M1.5/6.SN.ADO, rated 300V, 10A, for use with Nos 18 to 16 AWG solid or strande wire; types M4/6.SB.ADO M4/6.SN.ADO, rated 300V, 10A, for use with Nos 18 to 16 AWG. (DC side) and Nos 20 to 12 AWG. (wire clamp side) solid or stranded copper wire.

Note: Certified for use only as components of Certified electrical equipment where the suitability has been determined by the Canadian Standards Association.

The "NRTL/C" indicator adjacent to the CSA Mark signifies that the product has been evaluated to the applicable ANSI/UL and CSA Standards, for use in the U.S. and Canada. NRTL, i.e. Nationally Recognized Testing Laboratory, is a designation granted by the U.S. Occupational Safety and Health Administration (OSHA) to laboratories which have been recognized to perform certification to U.S. Standards.

APPLICABLE STANDARDS

CSA Std C22.2 No. 158-1987	-	Terminal Blocks
UL Std No. 1059	-	Electrical Terminal Blocks

Product Certification History

Revision	Date	Description
LR 23701-75	July 25, 1997	Alternate construction on serie MA2.5/5.S terminal blocks to cover change of current bar and clamp and also CSA NRTL/C on serie MA2.5/5.S.

Descriptive and Test Report

Montréal ■ Toronto ■ Edmonton ■ Vancouver ■ Tokyo ■ Hong Kong

REPORT NO: LR 23701-75

Edition 1: January 2, 1992; Application No LR 23701-75 - Rexdale
Issued by P. Johnson, C.E.T.; Reviewed by D. Hay, P. Eng.

Edition 2: July 25, 1997, Application No LR 23701-115 - Eastern Region
Issued by M. Legault, Eng., Reviewed by G. Foulem, E.I.T.

Certificate of Compliance has been issued

Pages Replaced: **REPORT RE-ISSUED**
Figure Added: 8

Contents: Pages - 1 to 8
Figures - 8

MARKINGS

The submittor's name, tradename, or registered trademark and the CSA Monogram are moulded on each terminal block. The catalogue number or type number, electrical rating, conductor size or range, are either moulded on each terminal block or appear on each containing carton. The assigned torque value is either moulded on each terminal block or appears on each containing carton, or in the manufacturer's catalogue. The CSA/NRTL/C Monogram may also appear on products listed in Part A.

ALTERATIONS

See Markings above.

FACTORY TESTS

Not Applicable.

DESCRIPTION

General: The subject terminal blocks are similar to one another, except for minor design variations and are similar to devices previously Certified as follows: Cat. Nos. MA2.5/5 (LR 23701-59), M1.5/6 and M4/6 (LR 23701-65). A complete description follows. Refer to attached figures for details.

Cat Nos MA2.5/5, M1.5/6, M4/6

1. Housing: Moulded of materials as shown below, approx 0.5mm thick min.

Material	Manufacturer	Flame Class
A3K	BASF	CSA 0.6V-2
216	Rhone Poulenc	UL 94V-0
BIPA82	BIP	0.6V-0 (ref. LR 23701-56)

2. Current Bar: Plated copper alloy, approx. 0.8 to 1.0mm thick. (See Fig. 8)

3. Clamp: Zinc plated steel, approx. 0.7mm thick min. (See Fig. 8)

4. Clamping Screw: Zinc plated steel, approx. 2.9mm dia, 9.2mm long.

5. Disconnect Blade: Plated copper alloy, approx. 0.8 mm thick.

TESTS

Application LR 23701-75: Test results are as follows.

CSA Std. No C22.2 No 158-1987
Manufacturer Entrelec Product Terminal Block - 150 V, 10A
Model or Cat No MA 2.5/5

Tests	Dielectric Strength	Oven Temp	Samples 1	2	3	4	5	6
Conductor Size			12	22				
Conductor Material*			CU	CU				
Conductor Gauge**			SOL	STR				
Conductor Stranding			-	7				
Torque (0.79 Nm) ++			OK	OK				
Overtorque - 110% x 0.79 Nm ++			OK	OK				
Accelerated Aging		105C	-	-				
Dielectric Strength								
Between Live Parts	1300V		OK	-				
Live Parts and Rail	1300V		OK	-				
Spacings Group A (0-150V)			N/A	-				
Spacings Group B (0-150V)			OK	-				
Spacings Group C (0-150V)			OK	-				
Spacings Group D (0-150V)			OK	-				
Spacings Group E (0-150V)			OK	-				

* CU - Copper
AL - Aluminum
** SOL - Solid Conductor
STR - Stranded Conductor
++ - Per Table 5.

CSA Std. No C22.2 No 158-1987
Manufacturer Entrelec Product Terminal Block - 10 A
Model or Cat No MA 2.5/5

Static Heating Sequence	3 Samples	2 Samples	2 Samples
Wire Size or Combinations	12	18	22
Conductor Material	CU (SOL)	CU (16 STR)	CU (7 STR)
Tightening Torque (Nm) - Per Table 5	0.79	0.79	0.79
Test Current, Amps	10 (rated)	Mechanical sequence	Mechanical sequence

Secureness Test			
Bushing Dia, mm	9.5	6.5	-
Height, mm	279	260	-
Weight, kg	0.9	0.45	-
Results	OK	OK	N/A

Static Heating Test Repeat

	Temp - Deg		
Sample 1	36	36	37
Sample 2	37	37	38
Sample 3	36	36	37
Sample 4	-	-	-
Room Ambient	24	24	24

Pullout Tests

Force Applied, N	60	30	20
Results	OK	OK	OK

CSA Std. No C22.2 No 158-1987
Manufacturer Entrelec Product Terminal Block - 300 V, 65A
Model or Cat No M4/6

Tests	Dielectric Strength	Oven Temp	Samples 1	2	3	4	5
Conductor Size			12 / 18		20 ++		
Conductor Material*			CU	CU			
Conductor Gauge**			SOL/ STR	STR			
Conductor Stranding			- / 16	10			
Torque (0.79 Nm) +			OK / N/A	OK			
Overtorque - 110% x 0.79 Nm +			OK / N/A		OK		
Accelerated Aging		105C	-	-			
Dielectric Strength							
Between Live Parts	1600V		OK	-			
Live Parts and Rail	1600V		OK	-			
Spacings Group A (0-300V)			N/A	-			
Spacings Group B (0-300V)			OK	-			
Spacings Group C (0-300V)			OK	-			
Spacings Group D (0-300V)			OK	-			
Spacings Group E (0-300V)			OK	-			

* CU - Copper
AL - Aluminum

** SOL - Solid Conductor
STR - Stranded Conductor

\+ - Per Table.
++ - Wire Clamp Side Only.

CSA Std. No C22.2 No 158-1987
Manufacturer Entrelec Product Terminal Block - 10 A
Model or Cat No M4/6

Static Heating Sequence	3 Samples	4 Samples ++	2 Samples +
Wire Size or Combinations	12 / 16	18	20
Conductor Material	CU (SOL/27 STR)	CU (16 STR)	CU (10 STR)
Tightening Torque (Nm)			
Specified by Submittor	0.79 / Insulation Piercing	0.79 / Insulation Piercing	0.79
Test Current, Amps	10 (rated)	Mechanical sequence	Mechanical sequence

\+ - Wire Clamp Side Only.
++ - 2 Samples - Wire Clamp Side,
2 Samples - Insulation Piercing Side.

Secureness Test

Bushing Dia, mm	9.5 6.5	6.5	-
Height, mm	279 260	260	-
Weight, kg	0.9 0.45	0.45	-
Results	OK	OK	N/A

Static Heating Test Repeat

	Temp - Deg		
Sample 1	32 30	32 30	32 30
Sample 2	34 32	34 31	34 32
Sample 3	34 31	34 31	34 31
Sample 4	- -	- -	- -
Room Ambient	24	24	24

Pullout Tests

Force Applied, N	60 40	30	30
Results	OK	OK	OK

CSA Std. No C22.2 No 158-1987
Manufacturer Entrelec Product Terminal Block - 300 V, 10A
Model or Cat No 1.5/6

Tests	Dielectric Strength	Oven Temp	Samples 1	2	3	4	5	6
Conductor Size			18					
Conductor Material*			CU					
Conductor Gauge**			STR					
Conductor Stranding			16					
Torque (0.79 Nm) +			N/A					
Overtorque - 110% x 0.79 Nm +				N/A				
Accelerated Aging		105C	-					
Dielectric Strength								
Between Live Parts	1600V		OK					
Live Parts and Rail	1600V		OK					
Spacings Group A (0-300V)			N/A					
Spacings Group B (0-300V)			OK					
Spacings Group C (0-300V)			OK					
Spacings Group D (0-300V)			OK					
Spacings Group E (0-300V)			OK					

* CU - Copper
AL - Aluminum

** SOL - Solid Conductor
STR - Stranded Conductor

CSA Std. No C22.2 No 158-1987
Manufacturer Entrelec — Product Terminal Block - 10 A
Model or Cat No M1.5/6

Static Heating Sequence	3 Samples	2 Samples
Wire Size or Combinations	16	18
Conductor Material	CU (26 STR)	CU (16 STR)
Tightening Torque (Nm) Specified by Submittor	Insulation Piercing	Insulation Piercing
Test Current, Amps	10 (rated)	Mechanical sequence

Secureness Test

Bushing Dia, mm	6.5	6.5
Height, mm	260	260
Weight, kg	0.45	0.45
Results	OK	OK

Static Heating Test Repeat

	Temp - Deg		
Sample 1	38	38	38
Sample 2	36	36	37
Sample 3	37	37	37
Sample 4	-	-	-
Room Ambient	24	24	24

Pullout Tests

Force Applied, N	40	30
Results	OK	OK

Edition 2 - LR 23701-115

Alternate construction to mean of secureness (current bar and clamp). The following tests were conducted with satisfactory results according to CSA C22.2 No. 158-1987 and UL 1059 on samples type MA2.5/5.

C22.2 No. 158-1987:
Secureness , Cl 6.3
Static Heating , Cl 6.4
Pull-out, Cl 6.5
Dielectric Strength, Cl 6.6
Verification of Performance, Cl 6.8

The tests data are attached in Appendix T to the CSA principal file LR 23701-59.

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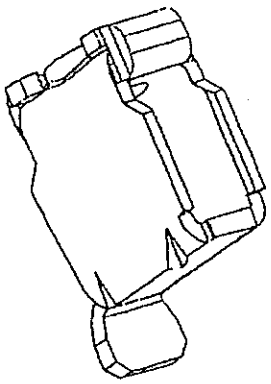
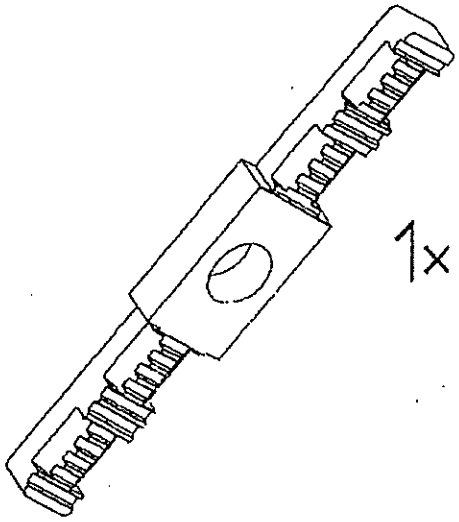
MODIFICATION DU SOUS-ENSEMBLE SERRES FILS ET BARRETTE DE LIAISON SUR LES BLOCS

- ANCIEN
- OLD

2x





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- NOUVEAU
- NEW

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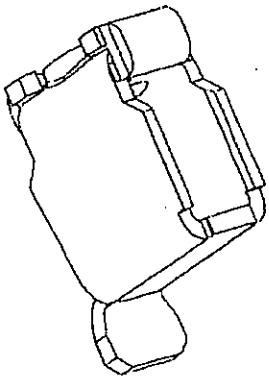

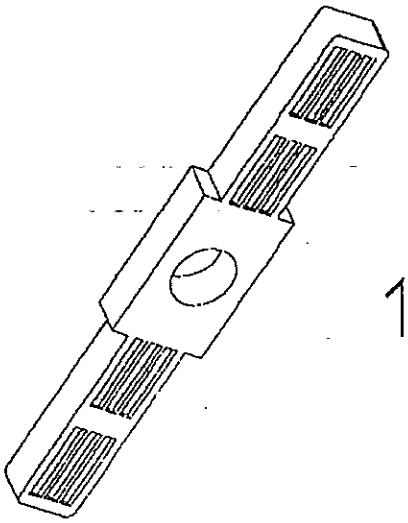

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